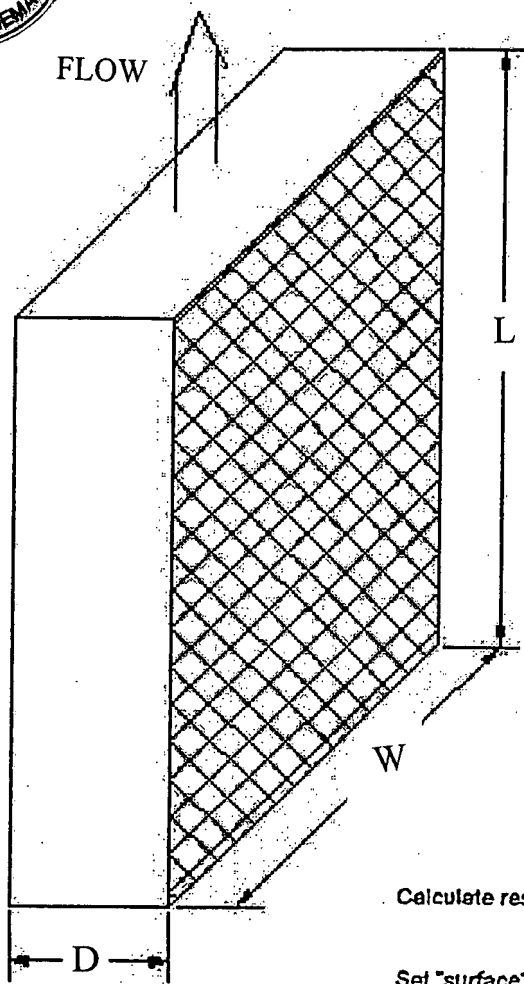DEFINE CELL SIZE

FLOW

FIG. 10a

Depth = 1 mm

Length = 15 cm

Width = 3 cm

Cross Area = 2 Length Width

Cross Area = 90 cm^2

Vol. = Length Width Depth

Vol. = 4.5 cm^3

L

W

D

SET FLOW RATE

$$TARGET := 50 \cdot \frac{cm^3}{1 \cdot min}$$ $$Duration := \frac{65 \cdot cm^3}{TARGET}$$

Duration = 78 s   Duration is time required to treat a unit of platelets

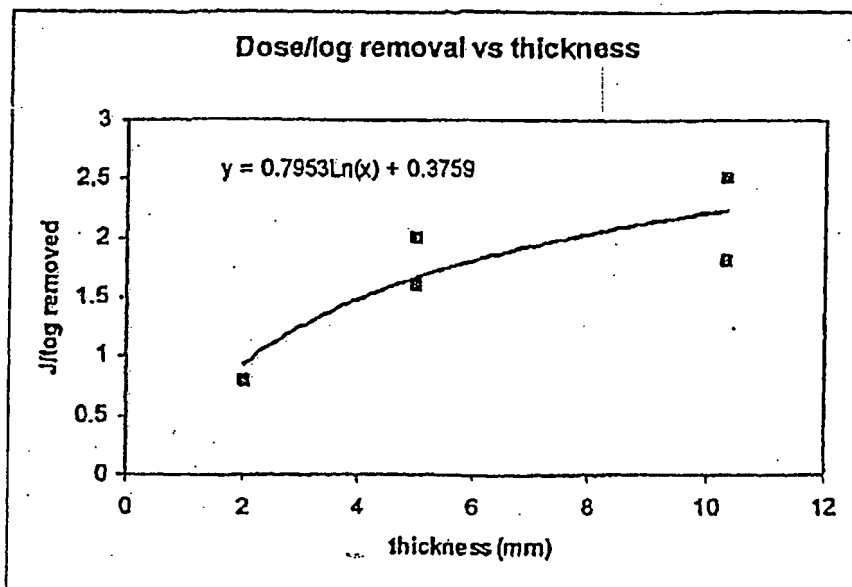Calculate residence time $$TIME := \frac{Vol}{TARGET}$$ TIME = 5.4 s

Set "surface" dose $$SDose := \frac{depth}{(2mm)} \cdot \frac{J}{cm^2}$$ Linear fit for small gaps

$$SDose = 0.5 \frac{J}{cm^2}$$ The "Surface Dose" is based on measurements of parvo reduction as a function of platelet (and plasma) thickness.
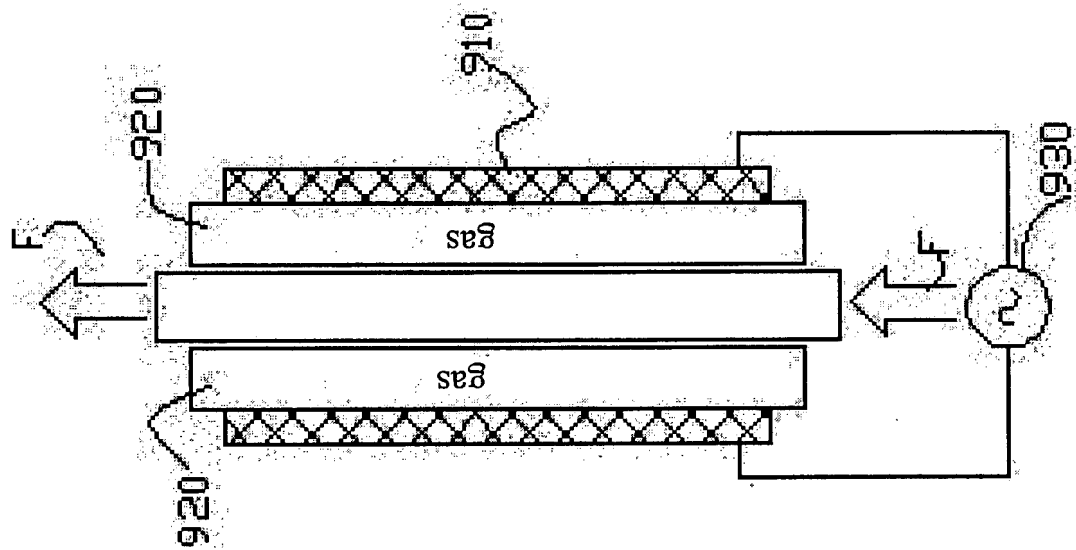
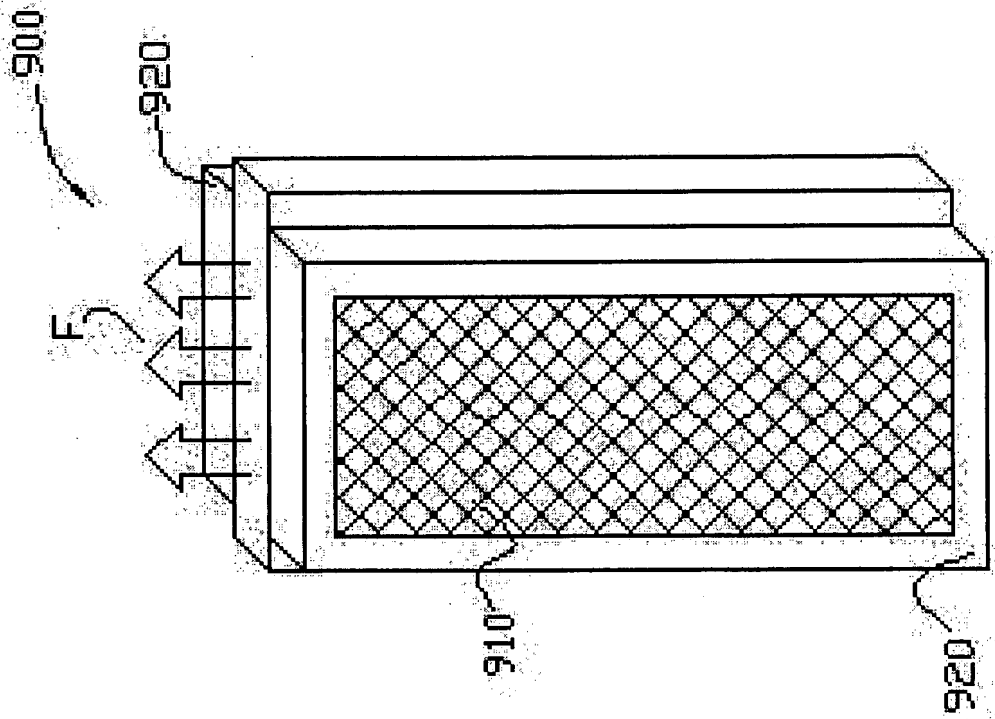**Dose/log removal vs thickness**

$y = 0.7953 Ln(x) + 0.3759$

J/log removed

thickness (mm)

FIG. 11b

FIG. 11a